## JULY 2019 Update

## **Cellular IoT Forecast Update**

## Major changes to the forecast over the last three months include:

- 1. We adjusted our 2018 Cellular IoT total shipments slightly upward to account for actual data in multiple vertical markets, but overall our 2018 predictions were very accurate.
- The overall mix of LoRa vs. LTE-M and NB-IoT remains roughly the same as our previous forecast, with China driving the shipments for NB-IoT and LoRa shipments coming from a wide breadth of different segments.
- 3. We added 8 million NB-IoT devices in 2018 related to white-goods in China. This is good news, as the washer/dryer application has become clear and Chinese appliance manufacturers have adopted the technology as a way to inform apartment dwellers about when it's a good time to walk downstairs for laundry. We've projected future growth for these white-goods applications in our "other apps" category.
- 4. We adjusted the numbers for NB-IoT-based smart meters, adding some gas and water meters, mainly due to growth in China.
- 5. We modified module pricing and semiconductor pricing with only minor updates, including ongoing price erosion assumptions. In particular we reduced ASP for the low cost whitegoods market which is dominated by Chinese subsidized semiconductors.
- 6. We adjusted 2018 module revenues to match up with earnings reports from Sierra Wireless, Telit, Gemalto, and U-Blox. We also used shipment data supplied by multiple other companies, but discounted some crazy and conflicting inputs that we received from China and Chinese suppliers.
- 7. Market shares only changed slightly over the past six months. We don't see rapid change during this phase of the market in terms of vendor positions.

